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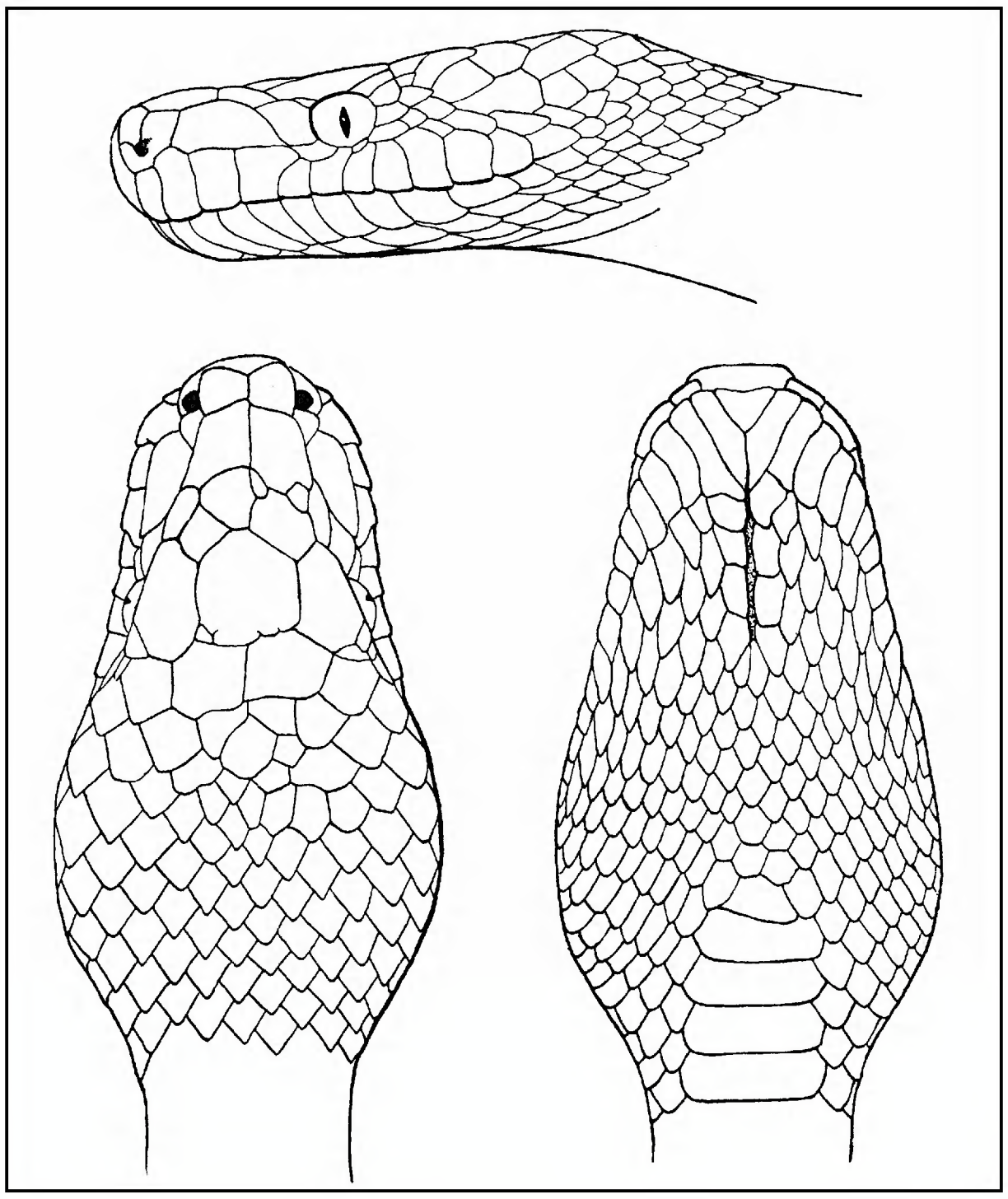

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Habitat Utilization by Reptiles and Amphibians at an Urban State Park in Indiana

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Abstract

The herpetological communities associated with three habitats at Fort Harrison State Park located in Indianapolis, Indiana were the subjects of this study during 2005 and 2006. The three habitats were an old-growth hardwood forest (OHF), a secondary hardwood forest (SHF), and a monotypic walnut plantation (MWP). Fourteen species of reptiles and amphibians were trapped from the three habitats using Y-shaped drift fence arrays. Pitfall traps, cover boards and funnel traps were used in association with these drift fences. Three species (*Anaxyrus americanus*, *Plethodon cinereus* and *Thamnophis sirtalis*) exhibited significant habitat preferences.

Introduction

In recent years, quantitative ecological surveys have received considerable attention in the United States (Dodd and Franz, 1993; Ricklefs and Schluter, 1993; Haila, 1996; Kopachena and Koller, 1999). However, in Indiana, surveys and habitat utilization studies of herpetofauna within the boundaries of urban state parks are rare. Many state parks located near or within cities have developed much of their forested acreage to accommodate public outings, walking/biking trails, roads and parking areas. All of these human alterations divide and segregate the remaining habitat, which may create barriers to migration. Although migration across roads or cleared fields does occur, such features undoubtedly inhibit movements in some species and create hazards for others, as by road mortality. Despite this, herpetological communities continue to exist within these minute forested habitats. Data obtained from habitat usage studies and surveys within the park's isolated patches of habitat can provide needed information to park officials for deciding which habitat will have the least impact on species diversity and abundance if developed. This study compares abundance of one species of reptile and two amphibian species in three different habitats within an urban state park located near Indianapolis. The three species are *Anaxyrus* (formerly *Bufo*) *americanus*, *Plethodon cinereus* and *Thamnophis sirtalis*.

Study site

Prior to the creation of the state park, this land was utilized by the United States military as a training encampment from 1906 to 1996. Fort Harrison State Park was created in 1996, and is located on the northeast edge of the greater Indianapolis metropolitan area. This park includes one of the largest tracts of unbroken hardwood forest in central Indiana and contains several small lakes as well as Fall Creek and its tributaries. Fort Harrison State Park receives approximately 400,000 visitors per year and is 1700 acres in size. The habitats within the park have seen some degradation from past agricultural use and modern park development, leaving a patchwork of habitats in various levels of succession. The three habitats studied were an old-growth hardwood forest (OHF), a secondary hardwood forest (SHF), and a monotypic walnut plantation (MWP).

The OHF (39°52′N, 86°0′W) is characterized as the oldest forest found within the state park. The canopy layer consists of hardwood deciduous tree species including the black oak (*Quercus velutina*), northern red oak (*Q. rubra*), pin oak (*Q. palustris*), chinkapin oak (*Q. muehlenbergii*) and shagbark hickory (*Carya ovata*). Sugar maple (*Acer saccharum*), flowering dogwood (*Cornus florida*), American elm (*Ulmus americana*) and American beech (*Fagus grandifolia*) also contribute to the canopy layer, but are considerably younger and are fewer in number. Leaf litter covers approximately 90% of the ground in this area. The herbaceous species present on the forest floor include the wild leek (*Allium tricoccum*), cut-leaved toothwort (*Cardamine bulbosa*), yellow trout-lily (*Erythronium albidum*), violets (*Viola* spp.), mayapples (*Podophyllum peltatum*) and trilliums (*Trillium* spp.). Because of the age of this habitat, considerable ground cover in the form of large fallen branches or trees exists. Such debris provides microhabitat for several species of reptiles and amphibians, most notably *Storeria dekayi* and *Plethodon cinereus*.

SHF (39°51′N, 86°1′W) is characterized by a considerably younger forest when compared to the OHF and has a different vegetative composition. The canopy layer consists of fewer oak species (*Quercus* spp.), and a few tulip trees (*Liriodendron tulipifera*), black cherry (*Prunus serotina*), and sugar maples (*Acer saccharum*). In addition, trees in the SHF are considerably smaller and provide less cover than in the OHS. The understory consists of sugar maple, box elder, American beech, American elm, and a few large introduced honeysuckle (*Lonicera* spp.) shrubs, which are mostly found on the edge of this habitat. This area has many of the same herbaceous species as the previous habitat including mayapples, violets, trilliums, and wild leek. This habitat is slightly moister and other common species observed were wild ginger (*Asarum canadense*), jewelweed (*Impatiens* spp.), and Solomon's seal (*Polygonatum* spp.). SHF has less leaf-litter and fallen branches than the OHF.

The MWP (39°52′N, 86°1′W) habitat is unique to the park. It is a plantation of black walnut trees (*Juglans nigra*) planted in the 1960s. Trees of a similar size and age were planted in rows, creating a nearly uniform canopy layer. The trees are evenly and widely spaced allowing nearly full sun to reach the forest floor. The introduced honeysuckle shrub (*Lonicera* spp.) is the predominate understory vegetation. The ground layer is

more exposed to sunlight than the two previous habitats described here, allowing for more herbaceous ground cover to exist. Excluding the area under the dense honeysuckle, about 90% of the ground is covered with grasses, sedges and several previously mentioned species (violets, wild leek and jewelweed). Several introduced species such as purple deadnettle (*Lamium purpureum*), garlic mustard (*Alliara petiolata*) and common dandelion (*Taraxacum officinale*) exist as ground cover also. Debris in the form of fallen trees and branches is nearly absent from this habitat.

Methods and materials

Within each of the three habitat types, three 50 m^2 plots were established. These plots were spaced approximately 50 m apart. All the plots were no less than 30 m from any adjacent habitat edge to avoid sampling species that were using edge habitat. In the SHF habitat, a paved road divides one of the plots from the other two plots. However, the plots remained approximately 30 m from the paved park road. One Y-shaped drift fence array was erected in the center of each of the three plots within each habitat type. Each arm of the Y was 25 m long and was made from sections of nylon erosion-control silt fencing measuring 15.2 m long and 0.5 m high. One minnow funnel trap measuring 60 cm by 25 cm was used at the distal ends of each arm of the drift fence for a total of three funnel traps per drift fence. Adjacent and halfway between the apex of each arm and the distal ends of the Y-shaped drift fence, one 0.5 m^2 piece of plywood was laid as a cover-board—a total of three such boards per drift fence. In addition, three five-gallon buckets were buried flush with the surface of the soil at the apexes of the drift fence as pitfall traps. Several holes were drilled into every bucket to provide drainage. (See Figure 1 for positioning of funnel traps, cover-boards and pitfall traps in reference to the drift fences). While checking the traps, visual searches were conducted on the way to and from the traps within the plots. If specimens were observed within these plots, they were recorded from that habitat type. After the needed data had been recorded, the captured specimens were released 10 m from the drift fences to avoid immediate recapture. Nocturnal and small, secretive species like *P. cinereus* were released under leaf litter or other natural debris to avoid exposure to diurnal predators.

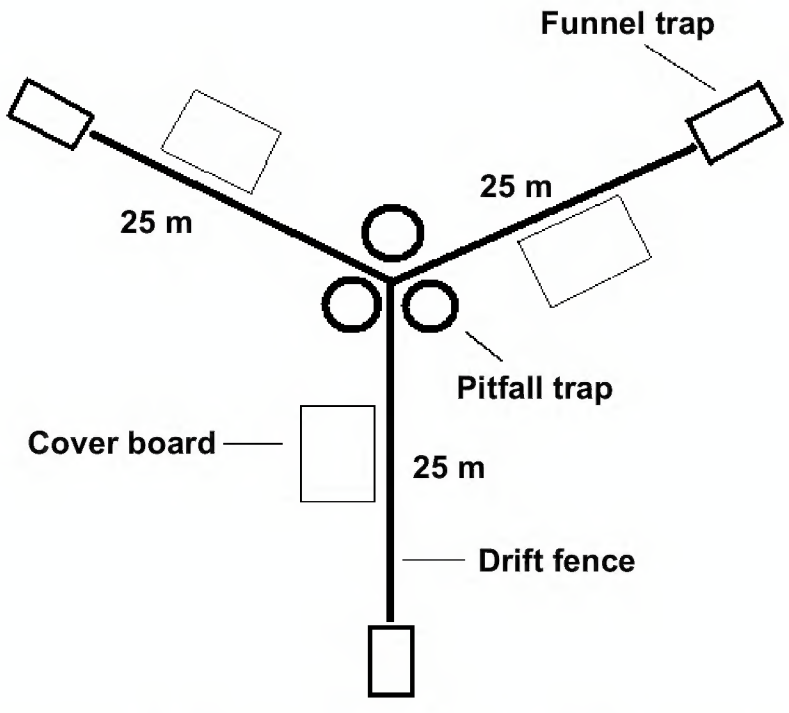

Figure 1. Y-shaped drift fence array used in this study showing funnel traps, cover boards and pitfall traps. Illustration by John E. Wyatt III.

To avoid specimens being counted more than once, squamates (snakes and lizards) were always scale-clipped on the right side of the sixth ventral scale (when venter was facing the investigator) anterior to the cloaca. Because individual anurans (frogs) and caudates (salamanders) could be identified via their color patterns, these were photographed using a digital camera and the photos were later compared for recaptures. During the entire study only seven specimens of all the species trapped were recaptures. Recapture data are not included herein.

All the traps were checked daily from 1 April through 28 September, in both years (2005–2006). During the two-year study, the traps were checked for a total 355 days. Data were analyzed using Systat statistical software (Systat Software, Inc., San Jose, CA 95110). Chi-square tests were used to evaluate the data.

Results and discussion

Of the three species reported here, *Anaxyrus americanus* was the most commonly trapped species. A total of 141 *A. americanus* were captured in the three habitats sampled for the two combined years. In both 2005 and 2006, 13 specimens were captured in the old-growth hardwood forest (OHF). In the secondary hardwood forest (SHF), 24 specimens were captured in 2005 compared to 27 in 2006. From the monotypic walnut plantation (MWP), 35 specimens were captured in 2005 and 29 specimens were captured in 2006. Based on the two years combined, *A. americanus* was found in significantly fewer numbers ($\chi^2 = 8.8$, $df = 2$, $p < 0.012$) in the OHF compared to the SHF and MWP (Table 1). The most disturbed and altered habitat (MWP) was represented by having highest number of *A. americanus* within the park. Other herpetological species have been reported to be more common in disturbed habitats. Reams and Gehrmann (2002) noted that *Coluber constrictor flaviventris* was also found to be significantly more common in a disturbed habitat (Blackland Prairie) when compared to an undisturbed relict (Blackland Prairie) habitat.

Plethodon cinereus was observed to be common throughout the park with the exception of highly disturbed areas. In 2005, 11 specimens were captured in the OHF compared to 20 in 2006 for a total of 31, while in the SHF, 18 specimens were captured in 2005 compared to 21 specimens in 2006 for a total of 39. From the MWP, no specimens were captured in 2005 and 2 specimens were captured in 2006 for a total of 2. For both 2005 and 2006, the number of *P. cinereus* captures in the MWP was significantly less than in both the OHF and the SHF ($\chi^2 = 23.07$, $df = 2$, $p < 0.001$). *P. cinereus* was observed more frequently in the SHF compared to the OHF in both years, although this difference was not statistically significant (Table 1). Petranka (1998) reported that *P. cinereus* populations reach their highest densities in well-drained, forested habitats. Burger (1935) reported that mature forest with deep soil with scattered logs and rocks provides an optimal habitat. In the MWP, where only two *P. cinereus* were found during the two-year investigation, very few logs exist on the forest

Table 1. Tabulations of the 14 species captured and their abundances in the three habitats for 2005, 2006 and both years combined. See text for descriptions of the OHF, SHF and MWP habitats.

Species	Year	OHF	SHF	MWP	Total
Acris crepitans	2005	2	0	0	2
	2006	0	0	0	0
	combined	2	0	0	2
Anaxyrus americanus	2005	13	24	35	72
	2006	13	27	29	69
	combined	26	51	64	141
Lithobates catesbeianus	2005	2	0	0	2
	2006	0	0	0	0
	combined	2	0	0	2
Lithobates clamitans	2005	16	0	0	16
	2006	5	0	0	5
	combined	21	0	0	21
Lithobates pipiens	2005	1	0	0	1
	2006	1	0	0	1
	combined	2	0	0	2
Ambystoma texanum	2005	0	1	0	1
	2006	0	3	0	3
	combined	0	4	0	4
Eurycea bislineata	2005	0	2	0	2
	2006	0	0	0	0
	combined	0	2	0	2
Plethodon cinereus	2005	11	18	0	29
	2006	20	21	2	43
	combined	31	39	2	72
Terrapene carolina	2005	2	0	0	2
	2006	0	0	0	0
	combined	2	0	0	2
Nerodia sipedon	2005	0	0	1	1
	2006	0	0	0	0
	combined	0	0	1	1
Pantherophis spiloides	2005	0	1	0	1
	2006	1	1	0	2
	combined	1	2	0	3
Storeria dekayi	2005	2	1	9	12
	2006	1	0	2	3
	combined	3	1	11	15
Thamnophis sirtalis	2005	5	21	17	43
	2006	3	7	11	21
	combined	8	28	28	64
Plestiodon fasciatus	2005	2	0	0	2
	2006	1	0	0	1
	combined	3	0	0	3

floor. In contrast, both OHF and the SHF have many fallen logs scattered throughout the habitat.

Thamnophis sirtalis was the most common species of reptile sampled in the park. A total of 64 *Thamnophis sirtalis* were captured in the three habitats for the two combined years. In 2005, eight specimens were captured in the old-growth hardwood forest (OHF), while in 2006 only three were captured. In the secondary hardwood forest (SHF), 21 specimens were captured in 2005 compared to seven specimens in 2006. From the monotypic walnut plantation (MWP), 17 specimens were captured in 2005 and 11 specimens were captured in 2006. Based on the two years combined, *T. sirtalis* was found in significantly lower numbers ($\chi^2 = 7.8$, $df = 2$, $p < 0.02$) in the OHF when compared to the SHF and MWP (Table 1). The MWP (the most disturbed and altered habitat) and SHF had equal numbers over the two year study period.

Other herpetological data: When recaptures were excluded, a total of 186 individuals representing 14 species (four snake species, one lizard species, one turtle species, five frog species, and three salamander species) were sampled in 2005, while in 2006 a total of 148 individuals representing nine species (three snake species, one lizard species, three frog species, and two salamander species) were sampled (Table 1). The total number of individuals captured for both years was 334. When total captures at all three habitats were considered together and both years were combined (Table 1), the three most abundant species were *Anaxyrus americanus* (42.2% of all captures), *Plethodon cinereus* (21.6% of all captures) and *Thamnophis sirtalis* (19.2% of all captures). These three species accounted for 83% of all the individuals sampled during the two-year survey. Two species (*Lithobates* [formerly *Rana*] *clamitans* and *Storeria dekayi*) were present at intermediate abundances and nine species (*Pantherophis spiloides* [formerly *Elaphe obsoleta*], *Nerodia sipedon*, *Terrapene carolina*, *Plestiodon* [formerly *Eumeces*] *fasciatus*, *Acris crepitans*, *Lithobates* [formerly *Rana*] *catesbeiana*, *Lithobates* [formerly *Rana*] *pipiens*, *Eurycea bislineata* and *Ambystoma texanum*) were represented by four or fewer individuals.

With the exceptions of *A. americanus, P. cinereus and T. sirtalis*, there were no significant differences in the total number of individuals captured at each site. Eleven species were captured from the OHF, seven species were captured from SHF, and five from the MWP.

Acknowledgments

We thank Corey Shaffer and Stacey Simison for the many field hours they put forth, without which this project could not have been successful. In addition, we thank Gary W. Ferguson (statistical analysis), Lynne Villers, Debbie Olson, Becky Dolan, Jonathan Pilarski, Joe Ehrenberger, and Lori Roedell, the staff of Indiana Department of Natural Resources (Permit #701-242), and the staff of Fort Harrison State Park.

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Note on Reproduction of the Wrinkled Thick-toed Gecko, *Pachydactylus rugosus* (Squamata: Gekkonidae), from Southern Africa

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Abstract

Histological examination was conducted on the reproductive organs of 27 wrinkled thick-toed geckos, *Pachydactylus rugosus*, from southern Africa. Males from all months examined: September-December, February, April and July were producing sperm indicating a prolonged spermiogenesis. This differs from males of other *Pachydactylus* species, which have periods in their testicular cycles during which no sperm are produced. The smallest reproductively active male measured 38 mm SVL. Mean female clutch size was 2.0 ± 0.0. The smallest reproductively active females measured 57 mm SVL.

Pachydactylus rugosus ranges from the Western Cape, Republic of South Africa, to Kaokoveld in Namibia where it inhabits semi-desert and succulent karroid veld (Branch, 1998). Pianka and Huey (1978) reported a clutch size of 2.0 for three *P. rugosus.* As a group, *Pachydactylus* are reported to produce clutches of two eggs and probably lay several clutches during a season (Branch, 1988). The purpose of this note is to report on a histological examination of *P. rugosus* reproductive organs utilizing museum specimens in an attempt to elucidate information on its reproductive cycle. The first histological information on the testicular cycle is presented.

Twenty-seven *Pachydactylus rugosus* were examined from the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California. The sample consisted of nineteen males (mean snout-vent length [SVL] = 50.0 mm ± 5.3 SD, range: 38-58 mm) and eight females (mean SVL = 57.8 mm ± 1.4 SD, range: 56-60 mm) collected in 1969-1970. Specimens were from: **Botswana,** Kgalagadi District, 9 km N, 11 km E Twee Rivieren (26°23′S, 20°43′E) LACM 83021, 16 km W of Middleputs (26°51′S, 21°38′E) LACM 83037; **Namibia,** Karas Region, 46 km N, 17 km E Aroab (26°22′S, 19°49′E) LACM 83023, 83024, 83026, 83027; **Republic of South Africa,** Northern Cape Province, 120 km N 54 km W. Upington (27°22′S, 20°43′E) LACM 83009-83011, 129 km N, 65 km W Upington, (27°17′S, 21°54′E) LACM 83015-83018, 29 km S, 40 km E. Rietfontein (27°00′S, 20°27′E) LACM 83012-83014, Kalahari Gemsbok National Park (25°45′S, 20°44′E) LACM 83019, 83020, 121 km N, 16 km E Upington (27°22′S, 21°25′E) LACM 83029-83032, 83034, 83035, 84099, 84100, 35 km W Pofadder (29°17′S, 19°08′E) LACM 83036.

Gonads were dehydrated in ethanol, embedded in paraffin, sectioned at 5 μm and stained with Harris hematoxylin followed by eosin counterstain (Presnell and Schreibman, 1997). Enlarged ovarian follicles (> 4 mm) were counted; no histology was done on them. Male and female mean body sizes (SVL) were compared using an unpaired *t* test (Instat, vers. 3.0b, Graphpad Software, San Diego, CA).

Males were significantly larger than females (unpaired *t* test, $t = 4.1$, $df = 25$, $P = 0.0004$). All males were undergoing spermiogenesis. Seminiferous tubules were lined by spermatozoa or clusters of metamorphosing spermatids; epididymides contained sperm. Males were examined from the following months: September (3), October (1), November (1), December (5), February (6), April (2), July (1). The smallest reproductively active male measured 38 mm SVL (LACM 83032) and was from April.

Monthly stages in the ovarian cycle are shown in Table 1. Mean clutch size for 3 females (enlarged ovarian follicles > 4 mm) or oviductal eggs was 2.0 ± 0.0 SD. The smallest reproductively active females measured 57 mm SVL, early yolk deposition in July (LACM 83020) and 2 enlarged follicles > 5 mm in September (LACM 83011).

There are published reports on reproduction in other species of *Pachydactylus*. The most comprehensive work is on *Pachydactylus bibronii* by Flemming and Bates (1995), currently *Chondrodactylus bibronii* (*sensu* Bauer and Lamb, 2005) in which males exhibited a seasonal testicular cycle with peak sperm formation from July to November followed by regression during summer. Goldberg (2006) reported what appeared to be similar timing in the testicular cycle of *Pachydactylus capensis* as males with testes in recrudescence (recovery for the next period of spermiogenesis) were found February to April and June and July. My finding of no regressed or recrudescent testes in *P. rugosus* may suggest the timing of events in its testicular cycle differs from that of other species of *Pachydactylus*. Examination of testes of additional *P. rugosus* are needed to resolve this question.

Table 1. Monthly stages in the ovarian cycle of 8 *Pachydactylus rugosus* females from southern Africa.

Month	*n*	No yolk deposition	Yolk deposition	Follicles > 4 mm	Oviductal eggs
Sept.	1	0	0	1	0
Oct.	1	0	0	0	1
Dec.	1	1	0	0	0
Feb.	3	3	0	0	0
July	2	0	1	1	0

There was no evidence in my study (oviductal eggs and concomitant yolk deposition in the same female) to suggest *P. rugosus* females produce a second egg clutch in the same year. However, some *C. bibronii* are reported to produce two clutches (Flemming and Bates, 1995). The number of clutches produced each year in wild *Pachydactylus* is unknown. However, *Pachydactylus fasciatus* may produce as many as six clutches a year in captivity (Barts et al., 2002).

Females of *P. rugosus* in my study and in Pianka and Huey (1978) deposited clutches of two eggs which is typical for other species of *Pachydactylus*: *P. capensis (*Pianka, 1986; Goldberg, 2006), *P. maculatus* (Haagner et al., 1993), *P. punctatus* (Auerbach, 1987), and several species in captivity: *P. mariquensis*; *P. geitje* and *P. weberi; P. tigrinus* and *P. bicolor* (Girard, 2001, 2002, 2004).

The genus *Pachydactylus* is very diverse in southern Africa with over 30 species known (Branch, 1988). Subsequent studies on different species are required before the variation in reproductive cycles exhibited by these geckos can be ascertained.

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I thank Christine Thacker (LACM) for permission to examine *P. rugosus.* Sean Kark assisted with histology.

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Editor's note: Some of the scientific nomenclature that Mr. Hoser uses is not universally accepted. The reader is encouraged to examine Mr. Hoser's taxonomic papers, all of which can be downloaded from www.smuggled.com. For an opposing view, see {Wüster et al. 2001. Taxonomic contributions in the 'amateur' literature: Comments on recent descriptions of new genera and species by Raymond Hoser. Litteratura Serpentium 21(3):67-79, 86-91}. This critique (in the form of the manuscript that was submitted) can be downloaded from http://biology.bangor.ac.uk/~bss166/Updates/Elapidae1998.htm.

A Lightning Trip to Southeast Queensland in November 2002

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From 31 October until 5 November 2002 I was in Brisbane as a guest of the Herpetological Society of Queensland (HSQI) and herpetologist Paul Woolf, who married on the 2nd of November. The basis of the trip was for me to photograph the wedding of Paul and Sarah on the Saturday and to address a Toowomba meeting of the HSQI the next day.

In spite of assurances from the Queensland National Parks and Wildlife Service (QNPWS) some months earlier that they'd also provide me with a permit to travel to Mount Isa and collect snakes for research purposes and on behalf of the Queensland Museum, the permit was "stopped" at the last minute and so that trip was cancelled. This was particularly irksome as the target species of the trip was the snake described by myself in 1998 as *Pailsus pailsei*, and which as of late 2004 was still only known from just five specimens, all of which had been collected in the Mount Isa/Riversleigh area before cane toads (*Bufo marinus*) overran the area in the late 1980s.

Well, I suppose that if this species does expire as a result of the toads, the QNPWS can claim their share of credit for the role they played in the demise of the snake, including making sure that none got into captivity to breed and maintain the species.

Finally, I should perhaps note that the individual bureaucrats from QNPWS and their Victorian counterparts (who did in fact issue all the relevant complimentary permits) were by and large helpful and on side and gave me all possible assistance in terms of completing and filing the never-ending mountains of paperwork required to get the permits. As this short paper is being written, myself and others are still trying to get the QNPWS on side in terms of issuing the relevant permits and if one is obtained, it is hoped to bring some *Pailsus pailsei* into captivity in order to secure the future of the species. For more on the current status of the species *Pailsus pailsei*, refer to Hoser (2004) and references cited therein.

And so, the five days in Brisbane and nearby areas was spent viewing local reptile collections and driving a few roads in search of reptiles. What follows is a brief summary of what I saw.

I arrived in Brisbane on 31 October 2002 at about 8.30 P.M., Brisbane time. Please note that all times given here are Queensland Summer time (no daylight saving). Furthermore all reptiles and frogs listed here as seen were adults unless otherwise indicated. As a matter of course all reptiles were left where seen.

Driving from Brisbane Airport to Walloon via Mount Glorious and past Wivenhoe dam, from about 9.30 to 10.30 P.M. we saw a few critters. The weather was slightly warmer than seasonal average with an air temperature in the mid 20s Celsius and little if any wind.

We only did a single sweep through the area, but saw the following species:

- two 150-cm carpet snakes (*Morelia macdowelli*)
- one 150-cm brown tree snake (*Boiga irregularis*)
- numerous cane toads (*Bufo marinus*) (about 50 in total)

On Friday 1 November 2002, the weather was hot and sunny, with a Brisbane maximum of about 30°C or more. It reached at least 34 in Ipswich. That night we went for a drive along the road from the Wivenhoe Dam to Mount Glorious from about 7.30 P.M. to about 8.30 P.M., (two passes only). Species seen on the road were:

- three scalyfoot legless lizards (*Pygopus lepidopodus*).

All adult, two missing tails, with short regenerated ones instead. The third was 115 cm in length and had a full tail and was red in color and gravid.

- two smallish (about 60–65 cm) brown tree snakes
- one very large *Anomalopus verreauxii* (A skink with reduced limbs)
- about 5 cane toads

At a park near the summit of the hill we saw an adult major skink (*Egernia frerei*) in a log and numerous (about 10) *Litoria chloris* around some water tanks.

The weather that night was seasonally warm, with an air temp in the high 20s and little if any wind. The next morning the weather was cooler and overcast as a result of the arrival of a weak front. This is mentioned as it clearly had an impact on the movement of reptiles the night before. The cooler weather persisted until well into Sunday. On Saturday, 2 November 2002, we did no night drives due to the celebration of Paul and Sarah's wedding and the cooler weather.

On Sunday 3 November 2002, we went to a small township just west of Toowoomba for the HSQI meeting and outside a meeting hall I found a young eastern brown snake (*Pseudonaja*

textilis) (about 45 cm) under a sheet of tin. It had the usual juvenile head markings. It was photographed, as were some legally held captive specimens brought in by HSQI members.

The eastern brown snake was subsequently released a short distance away, and away from human habitation by one of the HSQI members licensed to remove nuisance snakes. What I found noticeable about this particular specimen was that it seemed more docile than most others of this species I'd encountered over the years, including specimens from Victoria, New South Wales and even Queensland.

After the HSQI meeting, where I spoke about death adders (*Acanthophis*) (what else?), we drove further west to the house of HSQI member Dave Cavendish at Pittsworth, and looked at his collection. He had lots of critters including blue-bellied black snakes (*Panacedechis guttatus*), various pythons, other elapids and a range of lizards, including breeding *Pogona vitticeps*. Cavendish also had a massive 2-meter blue-bellied black snake that was mating with another in the same cage while we were talking about breeding herps.

By the way, for those unaware, both plain and speckled specimens come from the same areas. Pittsworth is in the heart of blue-bellied black snake country and it is probably the most common snake species in the area. A close number two is the eastern brown snake.

While there, I photographed a young (30 cm) blue-bellied black snake with numerous reddish pink flecks. It was in some ways reminiscent of a Collett's snake (*Panacedechis colletti*), but the patterning was different.

From Pittsworth, my chauffeur for the day, Todd, drove us towards Moonee for a night drive in search of reptiles. By the time it was nearly dark, we got to within about 10 km northeast of the township. Having been looking at the bushland and farms on the sides of the road as we'd driven here, we decided to target one section of road for our drive.

Thus we then spent about 2 hours driving the road from 29 km northeast of the township of Moonee (on the main highway from Dalby) to about 30 km northwest of Moonee. The area was essentially heavily treed (not cleared) and on whitish sandy soil and had scattered low rises in the area.

The air temperature was warmer than Brisbane and Toowoomba and in the afternoon we had noticed high clouds (pre-frontal clouds indicative of falling air pressure) as we drove towards Dalby and beyond. (Brisbane was hit with a front at about 5 P.M. the next day). Temps that night were in the mid to low 20s and we drove the road from about 7.30 to 9.30 P.M. Species seen were as follows:

- two male coral snakes (*Simoselaps australis*)
- two female coral snakes (one gravid with five eggs and one had eaten one egg and was NOT gravid). Like most of the smaller elapid species, this species is easily tail sexed, males having larger and thicker tails to accommodate the hemipenes. One snake actually bit me, but did not break the skin. The non-gravid female was run over by a car or truck before we found it. This was the only road-killed reptile seen. We had wanted to capture the gravid snake and take it to Brisbane to observe the snake laying eggs, measuring them and timing how long they took to hatch, before lodging all with the Queensland Museum, but as mentioned earlier, we did not get the relevant QNPWS permit, and so the snake was left where it was to continue dodging the cars and trucks.
- four golden-tailed geckos (*Diplodactylus taenicauda*), 2 adult males, 1 subadult female, 1 subadult male. These squirt a toxic sticky substance from their tails.
- one subadult *Diplodactylus steindachneri* (gecko)
- one *Oedura robusta* (gecko)
- two Burton's legless lizards (*Lialis burtonis*) (plain browny-gray color)
- three adult hooded scalyfoots (of two species) (*Pygopus* spp.). One of the darker smooth-scaled form and two of the rugose scaled arid zone form.
- one *Lerista*(?) species of skink, that was not identified to the species level.

On my final full day in Brisbane, I took photos of various reptiles in various private collections, including the following species:

- Storr's monitors (*Varanus storri*) from Mount Isa (heads only)
- King's skinks (*Egernia kingii*) (adults and subadult), a large and aggressive species from southwest Western Australia.
- Hosmer's skinks (*Egernia hosmeri*), from somewhere near Mount Isa.
- Gidgee skink. (*Egernia stokesii*), from unknown location. This species has a more flattened tail region than seen in Hosmer's skinks.
- and most importantly (for me) a northwest Queensland death adder (*Acanthophis woolfi*). The snake I photographed was a male from the Dajarra range, where they are very common. Contrary to some of the misinformation being circulated at present, this species (as described by Hoser [1998]) is neither *Acanthophis hawkei* (the West Barkly death adder, which is much larger and characterized by a thick cream bar on the labials that is lacking in *A. woolfi*), nor *Acanthophis rugosus*, a similar species from Irian Jaya, which is characterized by greater rugosity and more rounded bumps as opposed to angular, a greater trend towards darkening on the head and neck and other differences.

Although a windy cold front struck late in the afternoon at about 5 P.M. we did a single run of a road through bushland in the Lamington Range. The air temperature was seasonally cool and we saw no reptiles at all. But we saw lots of small mammals. Early the next morning I caught a plane back to Melbourne from Brisbane.

So what were my final parting impressions? Well, the herpetologists in Brisbane are always great. They seem like one big happy family and they welcome outsiders in much the same way. As keepers they are as good as any. I gathered this from the mating snakes and lizards I saw at a few private collections as well as eggs in incubators and the like.

The Queensland NPWS? Er well, they are in my bad books this week, but they are not all bad. Speaking to the local herpers, most reported the various officials usually doing the

right things by the herpers and the reptiles and using common sense more often than not. It's just that the red tape seemed to send a few of them a bit crazy, and that includes some who actually worked for the QNPWS! The other issue of course is that it takes just one reckless act by a bureaucrat to undo the good work by another hundred.

The reptiles themselves? Well, when in Brisbane, you just can't get away from them! They really are everywhere. Even in the inner suburbs, you are likely to see bearded dragons (*Pogona barbata*), carpet snakes and brown tree snakes. Green tree frogs (*Litoria caerulea*) are all over the place. Woolf's place was festooned with them every night! Queensland really is a great place for a herper.

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What You Missed at the January CHS Meeting

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January's general meeting was my first as emcee, and I thank those of you who managed to keep me on track and reminded me of all the things I almost forgot. I suppose the most significant event during the business portion of the meeting was the awarding of the Presidential Service Award by our past president, Linda Malawy, to Cindy Rampacek. If you know Cindy it's probably because you've attended a board meeting or you've met her at ReptileFest. Cindy lives in Milwaukee and runs an animal rescue operation up there, including dogs and reptiles. Even though she is rarely able to attend the general meetings, she contributes an extraordinary amount of time to furthering our organization, including serving on the board for the last three years—this year as recording secretary. Few of us contribute as much as Cindy has, despite her remote location, and the award is richly deserved.

As is the other award presented that night to Mike Scott. Mike received the Merit Award for all his efforts, particularly the many, many times that Mike has agreed to represent your society at various venues around the Chicago area. All too often, Mike was our only representative at these events and shows. Attending shows and displaying animals is fun, but when one does it as much as Mike has, it starts to be real work. On top of his show work, Mike was the person who brought the refreshments to our meetings. Hauling a cooler of drinks to the museum and collecting the funds so that we can slack our thirst is no easy task either, and Mike faithfully performed all this until personal issues caused him to have to curtail his activities on our behalf. It was a pleasure to see him recognized for all his hard work, and all of us hope to see more of him in the near future.

Both these individuals have worked hard to make your society one of the best. As in any volunteer organization, a few individuals manage to carry a disproportionate share of the load, and it's always nice to recognize those folks. But I think that both these individuals would say that they gained a great deal by participating, and everyone can contribute something. It's work *and* fun. Or does that sound like a line from Saturday Night Live?

The plaques awarded to Cindy Rampacek and Mike Scott for their efforts on behalf of the CHS in 2007. Photograph by Dick Buchholz.

Josh Chernoff managed to conduct another great raffle, but it's a continuing struggle to find really nice items. If you have anything that you can contribute, or can talk companies into donating, please let Josh know (773-925-1973; jleather60@aol.com). Please don't bring trash, and avoid just showing up at the meeting with large or bulky items. Anything not raffled Josh must bring back to his place. Give him some warning. Photograph by Dick Buchholz.

Which leads us to other fun things to do. This will be the fifteenth annual ReptileFest, and it's just around the corner, April 12 and 13. It's time to go to our web site and sign up to exhibit or help out. People who are intending to work but for various reasons cannot bring animals should still register as an exhibitor, and simply put the hours they can work or any special skills they may have in the boxes on the form that ask to list your animals. Please start signing up! We need you to make this the amazing event it should be.

Jason Hood is still doing a great job running the CHS forum, and it's a great place to find out what's going on with your organization. He has areas that will allow you to ask questions, keep track of our activities, and follow the run up to ReptileFest. You want to check it out.

I was scrambling around prior to the start of the meeting and suddenly standing in front of me was this tall, dark and handsome guy. OK, I'm not really one to judge that, but that's how he struck me. My razor-sharp mind immediately thought that this must be our speaker because he wasn't familiar to me (not unusual) and had the air of someone not belonging to the chaos but comfortable with his status. "Aha," I thought in my best Sherlock Holmes imitation, "This must be our speaker." I quickly introduced myself with one of what I think of as my clever witticisms. Of course, hardly anyone else agrees that I'm that witty, and Dr. Zoltan Takacs is no exception. He very politely looked at me with a quizzical expression on his face, and with a debonair European accent, asked me to repeat what I just said. I know when I need to abandon a particular tack, so I simply introduced myself as president and told him we were happy to have him as our speaker. He is cool, collected, easy to talk to, and should be starring in a spy movie. Instead he was nice enough to give us a great presentation.

Dr. Takacs is research associate assistant professor in the department of pediatrics, Pritzker School of Medicine, The

Dr. Zoltan Takacs at the podium. Photograph by Dick Buchholz.

University of Chicago. His doctorate is in pharmacology and his major interest is snake venom, particularly, why elapids are immune to their own venom. In the early 1990s he emigrated from his native Hungary to New York City, where he obtained his Ph.D., and then moved to Chicago a few years ago. He has traveled to 116 different countries, frequently using his piloting skills to conduct air surveys for likely localities for the venomous snakes he is seeking—localities that he then may have to boat or hike into. He often finds himself camping in inhospitable terrain, far from civilization, dealing with some of the most venomous snakes on the planet. He is an outstanding and dedicated field herper, a world-class photographer, a scientist doing cutting-edge research into proteins and snake venoms, and has appeared on National Geographic television specials. Scratch that "starring" comment above. Being a movie star would be way too boring for Zoltan. He spoke on "How the Cobra Escapes Its Venom," and for the next hour he took us on a quick dip into his exciting life using great photos, videos, and even animation to complement his speech.

Dr. Takacs gave us a wild ride through some of the more unusual and interesting places he's traveled to, followed by an exciting and erudite description of elapids' immunity to their own venom. He gave us an idea of what travel problems are involved when you live in a socialist country, being allowed travel only to other socialist countries. In his high school days this meant travel to Bulgaria, just south of his native Hungary, and being arrested for wandering into the militarized zone at the Greek border. The show started with a picture of a 15-year-old Zoltan holding two rear-fanged Montpellier snakes (*Malpolon monspessulanus*) he had just captured in Bulgaria. He had shots of travel to Vietnam when he was a little older, including pictures of a king cobra (*Ophiophagus hannah*), a slow loris and a krait (*Bungarus* sp.), some of which creatures he managed to smuggle back to Hungary. He admits to being slightly ashamed of that now, but times were different then.

He took us into Pakistan, with photos of snake charmers and camels, and gave us a shot of the helicopter needed to airlift his small group out of a civil war in Laos. We got air shots of New York and Tanzania, and cool pictures of green and black mambas (*Dendroaspis* spp.). We saw a Sahara sand viper (*Cerastes vipera*) disappear into the sands of the Negev desert, Israel, and a cute taipan (*Oxyuranus scutellatus*) as it hatched from an egg in Australia. Travels to Yemen and the Philippines required armed bodyguards, but Zoltan said the most trouble he's had occurred in Hyde Park, Chicago, when his home was twice burglarized. We stared at unique transportation in Borneo, including boats and elephants, and were introduced to the natives of Cameroon, the Philippines, Zaire, and many other countries. We had films of Dr. Takacs capturing a black-necked spitting cobra (*Naja nigricollis*), and scuba diving for yellow-lipped sea kraits (*Laticauda colubrina*) in Fiji and yellow-bellied sea snakes (*Pelamis platurus*) in Panama. All of this was being narrated with wit and style.

He moved into the venom problem during the second half of his talk. As do many of our speakers, he managed to make a complicated subject comprehensible to most of the audience without talking down to us. The mystery to be solved was why a cobra doesn't succumb to its own venom. Dr. Takacs explained how the neurotoxin he studied worked by inhibiting nerve to muscle communications, thus paralyzing the prey. Through extensive testing, it was determined that the elapids do not neutralize their venom with substances carried in plasma as is the case with many vipers. More testing showed that a sugar molecule actually binds to sites between the nerve cells and muscle cells, physically preventing the toxin protein from binding to the sites that would block the nerve to muscle communication. Interestingly, this glycosylation (Hey, you don't want to use big words, get your own column!) occurs in most mongooses and in meerkats, which also have immunity to cobra venom. A pretty neat animation showed how this all worked.

After the meeting many of us went to Father and Son for pizza, where I had the pleasure of sitting next to Zoltan. He's that rare individual who is very interesting and very modest, or at least he was that night. Like all good herpers, it was easy to sit and share food and drink with him, and easy to forget all the adventures he's had in his life while chatting with him. But I do think that I heard the theme from *Mission Impossible* playing as he climbed into his car.

You can learn more about Dr. Takacs, his adventures, and his research at his web site, www.zoltantakacs.com, but you won't get to talk to him and you'll miss his wry sense of humor. Thanks for a great evening, Zoltan.

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Herpetology 2008

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

CAJUN CHORUS FROG

E. M. Lemmon et al. [2008, Zootaxa 1675:1-30] describe the Cajun chorus frog, *Pseudacris fouquettei*, a new species from the south-central United States. This new species is morphologically similar to the parapatric species *P. feriarum* and has thus previously been considered synonymous with this species. The new species is geographically distinct from *P. feriarum* and from its sister species, *P. nigrita*. The new species is diagnosed based on advertisement call, morphological, and genetic characters. The specific name is a patronym for Martin J. "Jack" Fouquette, Jr., who studied *Pseudacris* in the 1960s and 1970s.

GLOBAL HABITAT LOSS—IMPLICATIONS FOR AMPHIBIAN CONSERVATION

A. L. Gallant et al. [2007, Copeia 2007(4):967-979] point out that a large number of factors are known to affect amphibian population viability, but most authors agree that the principal causes of amphibian declines are habitat loss, alteration, and fragmentation. This study provides a global assessment of land use dynamics in the context of amphibian distributions. This was accomplished by compiling global maps of amphibian species richness and recent rates of change in land cover, land use and human population growth. The amphibian map was developed using a combination of published literature and digital databases. An ecoregion framework was used to help interpret species distributions across environmental, rather than political, boundaries. Rates of land cover and use change were mapped with statistics from the World Resources Institute, refined with a global digital dataset on land cover derived from satellite data. Temporal maps of human population were developed from the World Resources Institute database and other published sources. The resultant map of amphibian species richness illustrates that amphibians are distributed in an uneven pattern around the globe, preferring terrestrial and freshwater habitats in ecoregions that are warm and moist. Spatiotemporal patterns of human population show that, prior to the 20th century, population growth and spread was slower, most extensive in the temperate ecoregions, and largely exclusive of major regions of high amphibian richness. Since the beginning of the 20th century, human population growth has been exponential and has occurred largely in the subtropical and tropical ecoregions favored by amphibians. Population growth has been accompanied by broad-scale changes in land cover and land use, typically in support of agriculture. This study merged information on land cover, land use, and human population growth to generate a composite map showing the rates at which humans have been changing the world. When compared with the map of amphibian species richness, it was found that many of the regions of the earth supporting the richest assemblages of amphibians are currently undergoing the highest rates of landscape modification.

PINE SNAKE HIBERNACULA

D. C. Rudolph et al. [2007, J. Herpetology 41(4):560-565] note that snakes are often highly selective in the choice of sites for hibernation, and suitable sites can potentially be a limiting resource. Hibernating Louisiana pine snakes (*Pituophis ruthveni*; N = 7) in eastern Texas and black pine snakes (*Pituophis melanoleucus lodingi*; N = 5) in Mississippi were excavated to characterize their hibernacula. *Pituophis ruthveni* hibernated exclusively in burrows of Baird's pocket gophers (*Geomys breviceps*), whereas *P. m. lodingi* hibernated exclusively in chambers formed by the decay and burning of pine stumps and roots. All snakes hibernated singly at shallow depths (*P. ruthveni* mean = 19 cm, max = 25 cm; *P. m. lodingi* mean = 25 cm, max = 35 cm). *Pituophis* taxa at higher latitudes and elevations hibernate communally and at greater depths. In contrast to northern pine snakes (*Pituophis melanoleucus melanoleucus*), none of the pine snakes in this study excavated hibernacula beyond minimal enlargement of the preexisting chambers. These differences are presumably the result of mild winters, an abundance of suitable sites offering sufficient thermal insulation, and reduced predation risk caused by absence of communal hibernation in traditional sites. It is increasingly apparent that, throughout their annual cycle, pine snakes are dependent upon fire-maintained pine ecosystems.

ESTIVATION IN A COCOON-FORMING FROG

C. R. Tracy et al.[2007, Copeia 2007(4):901-912] examined burrow microclimate and cocoon formation of the burrowing frog, *Cyclorana australis*, from northern Australia, during the dormancy season by monitoring frogs in burrows in the field. At the beginning of the dry season, while the soils were still quite moist, frogs dug shallow burrows, with 2–8 cm of soil above the top of the burrow chamber. The frogs spent 2–3 months underground without cocoons, but they began to form cocoons once the soils dried to water potentials that would dehydrate the frogs (as determined by laboratory experiments on water exchange). Frogs remained underground for up to six months, and then emerged when soil water potentials were great enough to permit water absorption, although it is unclear whether this was the primary cue for emergence. Soil temperatures adjacent to burrows were intermediate to those in full sun and full shade at 10-cm depth and increased throughout the dormancy period. Frogs removed from burrows after 2–4 months underground had a body mass 136% of their standard mass, indicating that burrowed frogs store a considerable amount of water in the bladder while in the burrows in the early weeks of aestivation. Because *C. australis* absorb water during the first part of estivation (or at least maintain water they absorbed prior to burrowing), and construct a relatively impermeable cocoon during the latter part of estivation, when they could lose water, these frogs may never experience water stress, despite being underground in the dry season for 5–6 months.

PANAMINT RATTLESNAKE NOW A SPECIES

M. E. Douglas et al. [2007, Copeia 2007(4):920-932] note that the Speckled rattlesnake (*Crotalus mitchellii*) is a polytypic taxon presently composed of five subspecies that range across southwestern North America, including the Baja Peninsula and islands in the Pacific Ocean and Sea of Cortés. The principles of genealogical concordance were employed to test the taxonomic status of three of the five subspecies (*C. m. mitchellii*, *C. m. pyrrhus* and *C. m. stephensi*). Two molecular marker systems were used: mitochondrial (mt) DNA ATPase 8 and 6 genes (675 base pairs, bp), and introns 5 and 6 of the nuclear (n) DNA ribosomal protein (RP) gene (449 bp). These markers were evaluated across 104 individuals of *C. mitchellii*: *C. m. mitchellii* (n = 3), *C. m. pyrrhus* (n = 83), *C. m. stephensi* (n = 18), with *Sistrurus c. catenatus* as the distant outgroup. Deep phylogenetic splits were detected in the subspecies of *C. mitchellii*, with 5.0–6.4% mtDNA sequence divergence (SD) separating *C. m. mitchellii* and *C. m. pyrrhus*, while *C. m. mitchellii* and *C. m. stephensi* had SD values of 6.4–7.3%. Similarly, *C. m. pyrrhus* and *C. m. stephensi* had SD values of 5.2–6.7%. In addition, *C. m. mitchellii* and *C. m. pyrrhus* were identical in all 449 intron bp, but *C. m. stephensi* differed from both at a single nucleotide polymorphism. The molecular results diagnose *C. m. stephensi* as sister to mainland subspecies of the *C. mitchellii* complex, a result consistent with certain head scalation characters and its northernmost geographic distribution in this complex. Furthermore, four morphological synapomorphies (supraocular scales prominently ridged and/or creased, contact between rostral and prenasal scales, ground coloration of tail congruent with that of body, and black rings in the distal 15% of the tail) also diagnose *C. m. stephensi* from all other subspecies of *C. mitchellii*. The authors hypothesize that the northern distribution of *C. m. stephensi* likely resulted from two vicariant events: Pliocene expansion of the Sea of Cortés as the Salton Trough, and Pliocene development of the lacustrine Bouse Embayment along the Colorado River drainage. Despite earlier conclusions based on morphology, the molecular results showed no evidence of intergradation between *C. m. pyrrhus* and *C. m. stephensi*. The authors advocate that *C. m. stephensi* be elevated to a full species, which renders a minimum of two species within the *C. mitchellii* clades they examined.

GENETICS OF AN ENDANGERED LIZARD

S. M. Hedtke et al. [2007, Herpetologica 63(4):411-420] used microsatellite loci to examine rangewide population structure and interpopulation gene flow in the federally threatened Coachella Valley fringe-toed lizard (*Uma inornata*). Results indicate low population differentiation consistent with high gene flow, recent colonization and range expansion, and/or frequent local extirpation/recolonization events. Given high historical gene flow among populations and current isolation of remaining populations, conservation planning for this species should include monitoring of potential deleterious effects that may result from reduction in gene flow, such as inbreeding and loss of genetic variation, to ensure maintenance of ecological and evolutionary population processes adequate for long-term survival of the species.

GREEN IGUANAS IN FLORIDA

K. L. Krysko et al. [2007, Iguana 14(3):143-151] document the geographic distribution, reproduction, potential ecological impacts, and nuisance value of the non-native green iguana *(Iguana iguana)* in Florida, and provide management recommendations for control of this species in Florida. Locality records of *I. iguana* were obtained via the literature and both photographic and specimen vouchers, and also from the field, where specimens were collected and observations made from May 1992 through December 2006. The authors compiled 3,169 records *of I. iguana* in Florida. *Iguana iguana* was first reported (but not breeding) in Florida in 1966 from Miami-Dade County; however, it is now reproducing and established in much of southern Florida, including many Florida Keys. Mating *I. iguana* were observed as early as December and as late as April. Ovipositioning usually takes place in sandy areas. Females were found to have vitellogenic follicles in November, December, and February; carried oviducal eggs between February and Aprl; and a single clutch of 41 eggs was found that was oviposited in April. Neonates were observed from May through August. *Iguana iguana* feeds on a variety of vegetation, as well as insects, tree snails, and possibly small mammals. This species causes considerable damage to landscape vegetation and often is considered a nuisance by land managers and property owners. Burrowing by Green Iguanas causes erosion and undermines sidewalks, foundations, seawalls, berms, and canal banks. They also force vehicular traffic to bra-ke; deposit unsightly and unhygienic defecations on moored boats, seawalls, docks, porches, decks, pool platforms, and inside swimming pools; potentially act as seed dispersers for invasive plant species; and may transmit *Salmonella* to humans. A number of steps can be taken by Florida landowners to help control *I. iguana* in the state: First, vegetation selected for landscaping should lack the showy flowers and colorful fruits that are eaten preferentially by iguanas. Second, trapping and removing live lizards can be undertaken using live traps (e.g,, Havahart, Tomahawk), snare traps, and nooses. Third, artificial nesting sites can be easily constructed and monitored during the reproductive season so that iguana eggs can be removed and destroyed. Finally, before purchasing pet iguanas, prospective owners should be educated on the life history details (e.g., large adult size, potential to inflict painful wounds, etc.) and complex husbandry requirements of this lizard, and be made aware that releasing this or any other non-native animal into the wild is illegal in Florida.

PARASITES OF INTRODUCED WALL LIZARDS

R. L. Burke et al. [2007, J. Herpetology 41(4):755-757] surveyed all four extant North American populations of introduced *Podarcis* (*Podarcis muralis* and *Podarcis sicula*) for helminths and hematozoans; both parasite groups infect these lizards in their native European habitats. Only small numbers of helminths and no hematozoans were found. The authors conclude that either these two *Podarcis* species did not bring many parasites with them, appropriate intermediate hosts are lacking, or that these populations have not been in North America long enough for new parasite faunas to become established.

Unofficial Minutes of the CHS Board Meeting, January 18, 2008

The meeting was called to order at 7:50 P.M. at the Schaumburg Public Library. Board members Andy Malawy, Linda Malawy and Matt O'Connor were absent.

Officers' Reports

Recording Secretary: Cindy Rampcek read the minutes of the December board meeting, which were accepted with minor corrections.

Membership Secretary: Mike Dloogatch reported membership as of December 2007 was 566, up by 21 from December 2006.

Vice-president: Jason Hood supplied a list of upcoming speakers/programs through August 2008.

Sergeant-at-arms: Dan Bavirsha reported attendance was 46 at the December Christmas party.

Committee Reports

Shows:

- Peggy Notebaert Nature Museum—the CHS has committed to show animals the first weekend of each month through June.
- Dinner with a Dinosaur / Project Exploration—February 22.
- Oakley Chicagoland Kids Expo—March 8 & 9.
- Reptile Rampage at theLake Forest Wildlife Discovery Center, Sunday, March 9.
- Chicagoland Family Pet Expo—March 14–16. This event will be back at the Arlington Racetrack.

Mike Dloogatch moved that the CHS provide CHS polo shirts for volunteers who have staffed their first 4 CHS-approved shows within a 12-month period. Jenny Vollman seconded and the motion passed unanimously.

ReptileFest 2008: Business cards are working out great! They make great handouts for the event. Deb Krohn is working on arranging both the nonprofits and the veterinarians. John Archer is looking at reworking exhibitor guidelines and updating them.

Library: Mike Dloogatch donated a (very slightly defective) copy of *Biology of Turtles*, edited by Wyneken et al.

Old Business

Jenny Vollman moved to order 100 each the turtle and the lizard magnets. The motion passed unanimously.

Spot books should be available at most events CHS is at.

New newsletters will be available at next board meeting and the Great Lakes Pet Expo.

Taxes and Insurance are coming due.

ReptileFest videos will be on the net soon.

CHS visit to Jim Nesci's home will feature "How he made his enclosures and why."

Next trip we are looking at is a spring/summer trip to the Lake Forest Wildlife Discovery Center.

New Business

Herps of Illinois aquariums need to be relocated by end of January.

Website: We need help! We are currently looking for suggestions to improve the CHS website.

E-mail notifications will be sent to Chicago area members for volunteer needs.

The meeting adjourned at 9:43 P.M.

Respectfully submitted by recording secretary Cindy Rampacek

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutrtionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, $.17 each; fuzzies, $.24 each; hoppers, $.30 each; weanling, $.42; adult, $.48. Rats: starting with pinks at $.45 each, to XL at $1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. PO Box 85, Alpine TX 79831. Call **toll-free** at (800) 720-0076 or visit our website: < http://www.themousefactory.com> .

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice availabe: small newborn pinks up to jumbo adults. Prices start at $25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: Graptemys.com T-shirts, 100% cotton, pre-shrunk, pigment-dyed shirts with the Graptemys.com embroidered logo. These are very high quality shirts with that stylish faded look. Sizes S-M-L-XL-XXL. Colors: Pacific blue, nautical red, brick red, plum, granite, khaki green and putty. All profits made from these shirts goes directly to in situ *Graptemys* research. $20 each with $3.00 shipping. Email: chris@graptemys.com or call (239) 437-4148 to order. You can look at the shirts at http://www.graptemys.com/shirts.htm

For sale: books. Kauffeld, Carl—*Snakes: The Keeper and the Kept*, 1969, 248 pp., 39 b&w photos, husbandry information and the author's adventures looking for snakes (particularly rattlesnakes) in Arizona, Texas, New York and South Carolina, previous owner's name inked out inside front cover, DJ slightly frayed on top of spine, mylar covering on DJ, hardbound, $52; Noble, G. Kingsley—*Biology of the Amphibia*, an ex-library copy of the 1954 Dover reprint of this 1931 classic, ex-library markings with card pocket inside back cover, otherwise a clean book in excellent condition, hardbound, $18; Dixon, James R.—*Amphibians and Reptiles of Texas* with keys, taxonomic synopses, bibliography (32 pp., literature from 1852-1982), and distribution maps, 1987; 434 pp.; 25 b&w photos, softbound—$15; Gaskell, Jeremy—*Who Killed the Great Auk?*, 2000, 227 pp., illustrated with b&w photos and drawings, an exhaustive scholarly history of this bird's extinction, DJ, hardbound, $10; Parmelee, David Freeland—*Antarctic Birds: Ecological and Behavioral Approaches*, 1992; 203 pp., illustrated with author's photos and watercolors, results of the extensive studies by Parmelee and his students, good info on the Antarctic in general, DJ with tears around edges, book itself in excellent condition, hardbound, $12. All books are in excellent condition except as noted. Subject to prior sale. $2.50 postage and handling for orders under $25, free for orders of $25 or more. William R. Turner, 7395 S. Downing Circle W., Centennial, CO 80122; telephone (303) 795-5128; e-mail: toursbyturner@aol.com.

For sale: Well started spider morph ball pythons (*Python regius*) available for free delivery in the Chicagoland area—males, $350. Also available are high-contrast, Sarawak locality and Walnut × Sarawak pairing Borneo pythons (*Python breitensteini*). Pricing is based on male sex with $50 more for females, if available: 2007 high-contrast, $150; 2007 Sarawak, $175; 2006 Sarawak, $200, 2007 Walnut × Sarawak (melanistic Borneos), $125. All feeding on frozen thawed adult mice and/or rats. Shipping available as an additional cost, if needed. Details and helpful info on my website at www.richcrowleyreptiles.com Contact Rich Crowley at 708-646-4058 or email pogona31@yahoo.com.

For sale: I am trying to downsize my collection as I move into my new apartment in Chicago and am looking to sell two of my more recent acquisitions. Both are about 2 years old now. I have a female Chihuahuan mountain kingsnake (*Lampropeltis pyromelana knoblochi*) for $100 and a beautiful male jungle carpet python (*Morelia spilota cheynei*) for $200. Please contact me at (217) 390-7672 or mroconnoDVM@gmail.com if you would like to see pictures or purchase them.

Internship available: The Kentucky Reptile Zoo, a nonprofit organization, is seeking student interns for the 2008 season. The zoo is an educational exhibit, venom production and research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will **not** be involved in the handling of any venomous species. Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for academic credit with their institutions. Benefits include experience with one of the most extensive and diverse collection of snakes in the United States, housing, and $55/week to cover expenses. Interns have been successful in finding zookeeper positions: over 95% hire rate! Personal transportation is recommended. A valid driver's license is required. Starting dates are flexible, but a minimum of three months covering summer (June-August) or fall (September-November) is required. Deadlines are April 1 for summer and July 1 for fall. To apply, send a cover letter, resume, transcript, and at least 2 (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L&E Railroad, Slade, KY 40376 or email to: reptilezoo@bellsouth.net.

Herp tours: **Madagascar—Tortoise Tour** & **Chameleon Tour** seeking adventurous members for January-February 2009. The goal of the tortoise tour, to be co-led by **Peter Pritchard** of the Chelonian Research Institute and **Bill Love**, will be to see all native species in the wild and record various aspects of their lives photographically. The later chameleon tour, co-led by **Mike Monge** of FL Chams and **Bill Love**, will focus on panther chameleons, trying to find and photograph as many of the color morphs as possible in the wild. Details are at Blue Chameleon Ventures' site at: www.bluechameleon.org.

Herp tours: The beautiful Amazon! Costa Rica from the Atlantic to the Pacific! Esquinas Rainforest Lodge, the Osa Peninsula, Santa Rosa National Park, and a host of other great places to find herps and relax. Remember, you get what you pay for, so go with the best! GreenTracks, Inc. offers the finest from wildlife tours to adventure travel, led by internationally acclaimed herpers and naturalists. Visit our website < http://www.greentracks.com> or call (800) 892-1035, E-mail: info@greentracks.com

Virtual Museum of Natural History at www.curator.org: Free quality information on animals—emphasis on herps—plus expedition reports, book reviews and links to solid information. Always open, always free.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: MADadder0@aol.com

REPTILE RAMPAGE 2008

Reptile Rampage 2008 will take place Sunday, March 9, from 10 A.M. to 4 P.M. at the Lake Forest Rec Center Gym, 400 Hastings Road, Lake Forest, IL 60045. The Rampage will be hosted by Lake Forest's Wildlife Discovery Center and sponsored by CroFab. Rob Carmichael, Curator of the Discovery Center, asks that you join him for this one-day event where many members from the Chicago, Wisconsin, and St. Louis herp societies will be showcasing an amazing assortment of reptiles for an educational exhibit. This is a great warm-up event for the greatest show on earth: the CHS's ReptileFest. Admission is $5; proceeds will go towards various herp conservation projects! For more info please contact Rob Carmichael at (847) 615-4388, or better yet, carmichr@cityoflakeforest.com. You can also check it out at www.girconservation.com.

Are you cold?

Looking for something to wear?

We won't give you the shirts off our backs.

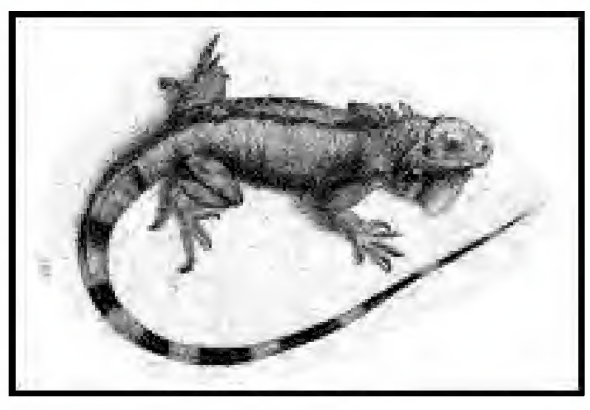
BUT, if you sign up to exhibit before **March 8**, you'll get a free Don Wheeler designed T-shirt.
We'll give you another if you bring a helper. That's it, though. Just two shirts.
By March 8 at the latest.

Free lunch. Free shirts. Much fun.

YOU CAN'T MISS THIS!

The management reserves the right to expand this program, but is unlikely to do so.

ReptileFest 2008
April 12, 13



UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, February 27, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **John C. Murphy** will speak on "Homalopsid Snakes and the Herpetofauna of Thailand." John, a past president of the CHS and a past editor of the CHS *Bulletin*, is a long-time educator, herpetologist, research assistant at the Field Museum, and author. His most recent book, *Homalopsid Snakes: Evolution in the Mud*, brings together important information and new knowledge about this fascinating group of snakes.

At the March 26 meeting **Bryan Suson**, head animal keeper at the Lake Forest Wildlife Discovery Center, will speak on "Herps of Ecuador." Bryan spent three months in Ecuador participating in various different projects ranging from frog population studies to an investigation of dung beetle diversity along elevational gradients in the eastern Andes.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., March 14, in the adult meeting room on the second floor of the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

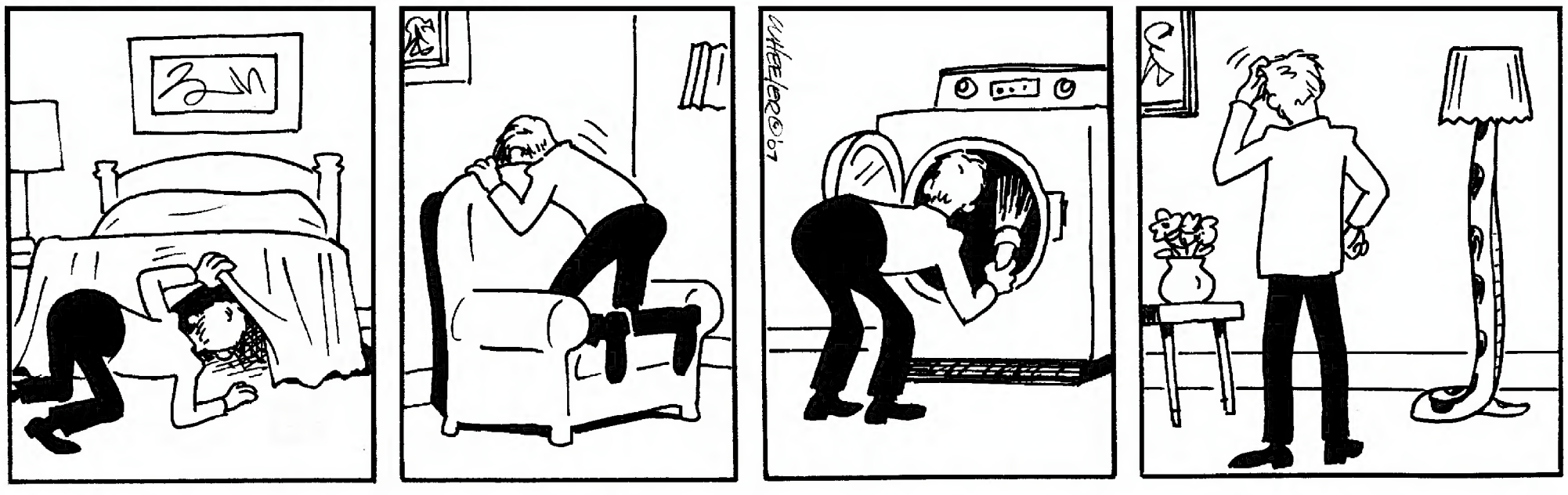
The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the CTC website: http://www.geocities.com/~chicagoturtle.

2008 SALAMANDER SAFARI

This year, the annual CHS Salamander Safari will be held on Saturday, March 29, 10 A.M. – 3 P.M., beginning at the Plum Creek Nature Center at Goodenow Grove Forest Preserve in Will County. Goodenow Grove is south of Crete, Illinois, 1¼ miles east of the intersection of Route 1 and Route 394 on Goodenow Road. If you need directions to get to this area, call the nature center at (708) 946-2216. From Plum Creek we will drive to other Forest Preserve District of Will County sites to search for amphibians. Species found or heard calling in previous inventories include spotted salamanders, blue-spotted salamanders, gray treefrogs, spring peepers, chorus frogs, bullfrogs, green frogs, and northern leopard frogs. Species not yet found but possibly occurring (or occurring at preserves nearby) include newts and wood frogs. As in past safaris, CHS members are encouraged to bring interesting amphibians from their personal collections for photography and display purposes. Coffee, juice and donuts will be provided, and a good time will be had by all!

THE ADVENTURES OF SPOT



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